Specification for
Asphaltic Emulsion Inductive Loop Sealant
8040-41A-15

Revised 9/6/01

1.0 SCOPE

This specification covers a one component; pourable sand filled, asphaltic emulsion for use in sealing inductive wire loops and leads imbedded in asphalt and portland cement concrete. This sealant is suitable for use in freeze-thaw environments.

2.0 APPLICABLE SPECIFICATIONS

The following specifications, test methods and standards in effect on the opening date of the Invitation to Bid form a part of this specification where referenced:

American Society for Testing and Materials D2939, D2523

California Test Method No. 434

California Department of Transportation Standard Specifications 1999

State of California Specification 8010-XXX-99 Inspection, Testing and Other Requirements for Protective Coatings

Code of Federal Regulations, Hazardous Materials and Regulations Board, Ref. 49CFR.

3.0 REQUIREMENTS

3.1 Composition

The composition of the loop sealant shall be a sand filled, pourable, water emulsified bitumen. It will be the manufacturer's responsibility to produce a one-component product to meet the properties specified herein.

3.2 Characteristics of the Sealant

3.2.1	Residue by evaporation, weight percent Use ASTM D2939	70 Minimum
3.2.2	Ash content, weight percent Use ASTM D2939 except calculate ash as a percentage of the sealant as received.	50 to 65

3.2.3	Firm set time, hours, test at one hour intervals, use ASTM D2939	4 Maximum
3.2.4	Brookfield viscosity, Poise RVT Spindle #3, 10 RPM at 75 ± 2°F.	50 to 125
3.3	Properties of the Dried Film	
3.3.1	Flexibility, Use ASTM D2939, except air dry specimens to constant weight at 75 ± 5°F and 50 ± 10% relative humidity. Condition mandrel and specimens 2 hours at 75 ± 2°F before test. Use aluminum panels, 0.03 inches thick (Q panel or equal).	No full depth cracks
3.3.2	Tensile Strength, psi, Cast sheets 0.25 inches thick and air dry at 75 ± 5°F, 50 ± 10% relative humidity for minimum of 16 hours. Load rate 0.05 inches/minute, use ASTM D2523.	20 Minimum
3.3.3	Elongation, % Same conditions as 3.3.2 use ASTM D2523	2.0 Minimum
3.3.4	Slant-shear strength to concrete, psi, Use California Test Method No. 434, Part VIII. Space damp blocks with 0.25 inches between slant faces, seal sides and bottom with tape and fill with the well-stirred sample, strike off the excess. Dry in 140°F oven to constant weight and condition 1 day at 75 ± 2°F before testing. Load rate to be 5000 lbs/minute.	150 minimum, with no loss of adhesion to concrete.
3.3.5	Resistance to water Use ASTM D2939, Alternative B	No blistering, re-emulsification or loss of adhesion
3.4	Workmanship	
3.4.1	The sealant shall be properly dispersed and any settling shall be easily redispersed with minimum resistance to the sidewise manual motion of a paddle across the bottom of the container. It shall form a smooth uniform product of the proper consistency. If the material cannot be easily redispersed due to excessive settlement as described above or due to any other cause, the sealant shall be considered unfit for use.	

3.4.2 The sealant shall retain all specified properties under normal storage conditions for 12 months after acceptance and delivery. The vendor shall be responsible for all costs and transportation charges incurred in replacing material that is unfit for use. The properties of any replacement materials, as specified in Paragraph 3.0, shall remain satisfactory for 12 months from date of acceptance and delivery.

3.4.3 The sealant shall comply with all air pollution control rules and regulations within the State of California in effect at the time the sealant is manufactured.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 Inspection

This material shall be inspected and tested in accordance with State of California Specification 8010-XXX-99, or as otherwise deemed necessary.

4.2 Sampling and Testing

Unless otherwise permitted by the Engineer, the material shall be sampled at the place of manufacture and application will not be permitted until the material has been approved by the Engineer.

5.0 PREPARATION FOR DELIVERY

5.1 Packaging

The sealant shall be prepared in a one-package system ready for application. The material shall be furnished in container size as specified in the purchase order or contract. If ordered in 5-gallon size, the containers shall be new, round, standard full open head with bails, shall be nonreactive with the contents, and shall have compatible gaskets. The containers shall comply with the U. S. Department of Transportation or the Interstate Commerce Commission regulations, as applicable.

5.2 Marking

All containers of material shall be labeled showing State specification number, manufacturer's name, date of manufacture and manufacturer's batch number.

The manufacturer shall be responsible for proper shipping labels as

outlined in Code of Federal Regulations, Hazardous Materials and Regulations Board, Reference 49CFR.

6.0 NOTES

6.1 Directions for Use

Saw cuts shall be blown clean with compressed air to remove excess water and debris. The sealant must be thoroughly stirred before use and hand poured into the slots. Due to the sand content of this material, pumping is not recommended. Any clean up of road surface or tools can be done with water, before the sealant sets.

6.2 Patents

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to identify and save the State of California, and its duly authorized representatives, from all suits at law or action of every nature for, or on account of, the use of any patented materials, equipment, devices or processes.

6.3 Certificate of Compliance

The manufacturer shall furnish a Certificate of Compliance with each batch of sealant, in accordance with the provision of Section 6-1.07 of California Department of Transportation Standard Specifications, January 1981.